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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,470

06/12/2006

Larry N. Thibos

P00873-US-01

1103

7590

12/28/2009

ICE MILLER

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EXAMINER

GREECE, JAMES R

ART UNIT

PAPER NUMBER

2873

MAIL DATE

DELIVERY MODE

12/28/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,470	<b>Applicant(s)</b> THIBOS ET AL.	
	<b>Examiner</b> JAMES R. GREECE	<b>Art Unit</b> 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/12/2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/27/2009 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The applicant utilizes a number of abbreviations in this claim. The abbreviations do not clearly convey the meaning of the metrics. A full disclosure of the metrics should be included in the claim as the abbreviations could represent a number of different metrics.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 9-14, & 17-19 rejected under 35 U.S.C. 102(b) as being anticipated by Stantz et al (US 2002/0186346 A1).

Re Claim 1, Stantz et al teaches a method for optimizing a refractive prescription without using subjective refractions (see abstract), the method comprising the steps of: a. obtaining aberrometric data from a patient by way of an aberrometer (see at least 0036); and b. utilizing the aberrometric data to perform an equivalent quadratic fitting calculation that optimizes the quality of the retinal image to obtain at least one clinical refractive spherocylindrical prescription for the patient; whereby the method for optimizing a refractive prescription occurs without the use of subjective refractions (see at least 0025-0026).

Re Claim 2, Stantz et al teaches further comprising the step of adjusting the refractive prescription to maximize the utilization of the patient's depth of field if the aberrometric data suggests that the patient's vision is myopic (see at least 0025-0026 & 0064, & 0074).

Re Claim 3, Stantz et al teaches further comprising the step of adjusting the ideal optic prescription to maximize the utilization of the patient's depth of field if the aberrometric data suggests that the patient's vision is hyperopic (see at least 0025-0026 & 0064, & 0074).

Re Claim 4, Stantz et al teaches wherein the step of utilizing the aberrometric data to perform an equivalent quadratic fitting calculation is performed by a computer processor (see at least 0023).

Re Claim 5, Stantz et al teaches further comprising the step of evaluating the results and allowing a user to determine whether the prescription should be further optimized (see at least 0026).

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Re Claim 6, Stantz et al teaches further comprising the step of selecting one of a plurality of optic prescriptions (see at least 0026).

Re Claim 7, Stantz et al teaches further comprising the steps of a. obtaining patient data(see at least 0026); and b. utilizing the patient data to optimize a clinical refractive prescription (see at least 0026).

Re Claim 9, Stantz et al teaches A method for optimizing a refractive prescription without using subjective refractions (See at least abstract), the method comprising the steps of: a. obtaining aberrometric data from a patient by way of an aberrometer (see at least 0026); b. selecting a metric of optimized image quality (see at least 0026); c. generating an aberration map from the aberrometric data (see at least 0036); and d. simulating a through focus experiment; whereby the method for optimizing a refractive prescription occurs without the use of subjective refractions (see at least 0026).

Re Claim 10, Stantz et al teaches further comprising the step of adjusting the ideal optic prescription to maximize the utilization of the eye's depth of field if the aberrometric data suggests that the patient's vision is myopic (see at least 0025-0026 & 0064,& 0074).

Re Claim 11, Stantz et al teaches, further comprising the step of adjusting the ideal optic prescription to maximize the utilization of the eye's depth of field if the aberrometric data suggests that the patient's vision is hyperopic(see at least 0025-0026 & 0064,& 0074).

Re Claim 12, Stantz et al teaches, wherein the step of simulating a through focus experiment is performed by a computer processor (see at least 0023).

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Re Claim 13, Stantz et al teaches, further comprising the step of evaluating the results and allowing a user to determine whether the prescription should be further optimized (see at least 0026).

Re Claim 14, Stantz et al teaches, further comprising the steps of a. obtaining patient data (see at least 0026); and b. utilizing the patient data to optimize a clinical refractive prescription (see at least 0026).

Re Claim 17, Stantz et al teaches, further comprising the step of selecting a prescription that maximizes the chosen metric (see at least 0026).

Re Claim 18, Stantz et al teaches, wherein the prescription that maximizes the chosen metric is maximized for a specific distance (see at least 0026).

Re Claim 19, Stantz et al teaches, wherein the prescription that maximizes the chosen metric is maximized to achieve a desired trade-off between maximal quality and depth of focus (see at least 0026)

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 8 and 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stantz et al (US 2002/0186346 A1) as applied to claim 1&9 above, and further in view of Cox et al (USPUB 2004/0054358 of record).

Re claims 8 & 15, Stantz et al does not explicitly teach further comprising the steps of: a. obtaining environmental data; and b. utilizing the environmental data to optimize a clinical refractive prescription

However Cox et al teaches a. obtaining environmental data; (for details see at least paragraph 0011, line 10) and b. utilizing the environmental data to optimize a clinical refractive prescription (see at least paragraph 0059 and numeral 410).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Stantz et al to include the steps a. obtaining environmental data; and b. utilizing the environmental data to optimize a clinical refractive prescription for the predictable result of providing a more personalized and accurate prescription for the patient.

9. Claim 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stantz et al (US 2002/0186346 A1) and further in view of Williams et al (USPAT 5,777,719 of record).

Re claim 16, supra claim 9. Stantz et al fails to explicitly teach comprising the additional step of recalculating metrics for each condition in the through focus simulation.

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However, within the same field of endeavor, Williams et al (USPAT 5,777,719) teaches for example in Col. 3, 13-20, comprising the additional step of recalculating metrics for each condition in the through focus simulation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Stantz et al to include a step recalculating metrics for each condition in the through focus simulation as taught by Williams et al for the predictable result of a more complete and accurate accounting of the eye's aberrations.

10. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stantz et al (US 2002/0186346 A1).

Re claim 20, Stantz et al does not explicitly teach wherein the equivalent quadratic fitting calculation nulls the second-order Zernike coefficients in the aberrometric map.

Re claim 21, Stantz et al does not explicitly teach wherein the equivalent quadratic fitting calculation nulls the second-order Seidel coefficients in the aberrometric map.

Re claim 22, Stantz et al does not explicitly teach further comprising the step of eliminating at least one spherical and cylindrical refractive error by nulling the second-order Zernike coefficients in the aberrometric map

Re claim 23, Stantz et al does not explicitly teach further comprising the step of eliminating at least one spherical and cylindrical refractive error by nulling the second-order Seidel coefficients in the aberrometric map.

However the examiner argues that zeroing/nulling out the second order coefficient of a mathematical series is not something that is patently distinct from the prior art as this is a



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standard mathematical procedure of which anyone having ordinary skill in the art of statistics/mathematics would be well aware and would find to be obvious. And further since the device is providing a mathematical simulation one having ordinary skill in the art would require ordinary skill in mathematics/statistics. Therefore the examiner takes official notice to the fact that this process would be obvious to one having ordinary skill in the art. Furthermore since this is effectively claiming that someone is utilizing a mathematical process to determine an answer to a problem it is equivalent to claiming that they used factoring to solve for  $x$ , albeit this mathematical process is far more eloquent and advanced than factoring. Clearly the process would provide the predictable result of removing the influence on one coefficient when calculating other coefficients.

### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. GREECE whose telephone number is (571)272-3711. The examiner can normally be reached on M-Th 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James R Greece/  
Examiner, Art Unit 2873  
12/18/2009

/Joseph Martinez/  
Primary Examiner, Art Unit 2873